

Acnet Resend Log

Server node diagnostic

Thu, May 20, 2004

Acnet data requests using the RETDAT protocol via a server node can recover from a contributing node dropping out by resending the request to the missing node to remind it of its part of the request. This note describes a diagnostic that logs such resends for implementation in server nodes such as node0600 used in Linac.

Every time a resend is issued, a record is written into a data stream called RESENDL. The 16-byte record format is as follows:

<i>Field</i>	<i>Size</i>	<i>Meaning</i>
rsndNode	2	target node for resent request
rsndSize	2	size of data requested
rsndDev	2	#devices in request
rsndFTD	2	frequency time descriptor
rsndTime	8	time-of-day in usual BCD format

The routine that resends requests is called RESENDX and is called by ACUpServ. The diagnostic code is called from RESENDX, only if the ACSRESEND or NetQueue call succeeds.

```
void ResendXD(ACNET_REQ_BLOCK *xreq)
```

The data stream index value is housed in a low memory variable called RESENDX. It is a 2-byte value that is -1 if no data stream named RESENDL is found in the DSTRM table. This variable is set during initialization of the ACReq task. The address of the variable is 0x6F8 in low memory. A companion counter of the number of records written called RESENDNR is the 2-byte value at 0x6FA in low memory. This can be used to easily scan a collection of nodes for any resend activity. The RESENDNR count will work even if there is no RESENDL data stream defined in a given node. In practice, such a data stream is likely to be defined only in nodes that are traditionally Acnet server nodes.

The PowerPC version of this feature was installed and tested in node0590. When a contributing node was modified internally to use a very long period FTD, after a couple of seconds, a resend was issued, the response to which was that that node rejoined the party of contributing nodes in complete synchronization with the others. The same logic is also installed in the latest IRM system version.